

**EVALUATION ON THE IMPLEMENTATION OF
OCCUPATIONAL HEALTH AND SAFETY
MANAGEMENT SYSTEM (SMK3) IN THE ROAD
IMPROVEMENT PROJECT OF KENTENG-BANGSRI
R.200 GROBOGAN REGENCY TO PP NO. 50 TAHUN 2012
(Case Study: Improvement of Kenteng-Bangsri Road R.200
Grobogan Regency in 2020)**



**Compiled as one of the requirements for completing the Strata I Study
Program at the Department of Civil Engineering, Faculty of
Engineering**

By:

YUAN AJI GALANG PRATAMA
D10A163007

**CIVIL ENGINEERING DEPARTMENT
ENGINEERING FACULTY
UNIVERSITAS MUHAMMADIYAH SURAKARTA
2021**

APPROVAL SHEET

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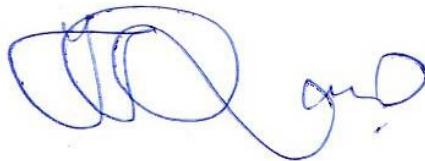
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by:

YUAN AJI GALANG PRATAMA
D 10A 163 007

Has been checked and approved to be tested by:

Supervisor Lecturer



Ir. Muhammad Nur Sahid, MM, MT
NIP: 1966.0911.1995.02.1.001

VALIDATION SHEET

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D10A163007

Has been defended in front of the Examiners
Engineering Faculty
Universitas Muhammadiyah Surakarta
On the day Tuesday, June 15th 2021
And declared qualified

Board of Examiners:

1. Ir. Muhammad Nur Sahid, MM, MT (.....)
(Chair of Examiner)
2. Anto Budi Listyawan, ST, M.Sc. (.....)
(Member I of Examiner Board)
3. Budi Priyanto, ST, MT (.....)
(Member II of Examiner Board)

Dean,



Rois Fatoni, ST., M.Sc. Ph.D
NIDN. 0603027401

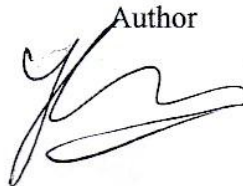
STATEMENT

I hereby declare that in this scientific publication no work has ever been submitted for obtaining a bachelor's degree in a college and to my knowledge there are also no works or opinions that have been written or published by other people, unless in writing they are referred to in the manuscript and mentioned in bibliography.

If in the future there is evidence of untruth in my statement above, then I will take full responsibility

Surakarta, June 15th 2021

Author



YUAN AJI GALANG PRATAMA

D10A163007

EVALUATION ON THE IMPLEMENTATION OF OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT SYSTEM (SMK3) IN THE ROAD IMPROVEMENT PROJECT OF KENTENG-BANGSRI R.200 GROBOGAN REGENCY TO PP NO. 50 TAHUN 2012

Abstrak

Industri konstruksi adalah salah satu industri yang paling dinamis dan responsif terhadap perkembangan ekonomi suatu bangsa. Hal ini pun berpengaruh terhadap perluasan lapangan pekerjaan dan menimbulkan ketertarikan kepada masyarakat untuk menjadi tenaga kerja dalam proyek konstruksi. Dalam pelaksanaan proyek konstruksi tentunya rawan akan resiko kecelakaan kerja maupun penyakit yang ditimbulkan akibat pekerjaan. Kecelakaan kerja yang terjadi dapat menyebabkan proyek terhambat atau berhenti dalam aktivitas pekerjaannya. Untuk mengatasi hal tersebut, maka dilakukan tinjauan sistem yaitu penerapan Sistem Manajemen Keselamatan dan Kesehatan Kerja (SMK3) yang sudah diatur dalam Peraturan Pemerintah Republik Indonesia Nomor 50 Tahun 2012. Dari hasil penelitian yang dilakukan pada Proyek Peningkatan Jalan Kenteng-Bangri R.200 Kabupaten Grobogan tahun 2020 menghasilkan bahwa; Penerapan Sistem Manajemen Keselamatan dan Kesehatan Kerja (SMK3) sudah dilakukan sesuai rangkaian proses SMK3 konstruksi, dan masih ada yang belum terpenuhi. Hasil penerapan SMK3 berdasarkan PP No. 50 Tahun 2012 untuk tingkat awal sebanyak 64 kriteria mendapatkan presentase sebesar 71.9% yang termasuk kedalam penilaian baik.

Kata Kunci: smk3, k3, pp number 50 tahun 2012

Abstract

The construction industry is one of the most dynamic and responsive industries to the economic development of a nation. This also affects the expansion of jobs and generates interest in the community to become a workforce in construction projects. In the implementation of construction projects are certainly prone to the risk of work accidents and diseases caused by work. Work accidents that occur can cause the project to be hampered or stopped in its work activities. To overcome this, a system review was conducted, namely the implementation of occupational safety and health management system (SMK3) which has been regulated in Government Regulation of the Republic of Indonesia Number 50 of 2012. From the results of research conducted on the Kenteng- Bangri R.200 Road Improvement Project Grobogan district in 2020 in that; The implementation of Occupational Safety and Health Management System (SMK3) has been carried out in accordance with the series of construction SMK3 processes, and there are still criteria that have not been met. The results of smk3 implementation based on PP No. 50 of 2012 for the initial level as many as 64 criteria get a percentage of 71.9% which is included in the good assessment.

Keyword: smk3, occupational health and safety, pp no. 50 tahun 2012

1. INTRODUCTION

The construction industry is one of the most dynamic industries and is responsive to the economic development of a nation (Lewis, 2004). This is evidenced by the Indonesian Central Statistics Agency (BPS) which states that the construction sector contributes 0.72% to economic growth. This also affects the expansion of employment opportunities and creates interest in the community to become workers in construction projects. In the implementation of construction projects, of course, it is prone to the risk of work accidents and diseases caused by work. As reported through the okezone.com media portal on January 13, 2020, which reported "In the 2018 period, work accident cases reached 157,313 cases. Meanwhile, in the period of September 2019, there were around 130,923 cases of work accidents that occurred. Work accident cases that occur in Indonesia, according to data from the Social Security Administration (BPJS), no less than 6 workers die every day due to work accidents. According to data from the International Labor Organization (ILO), in Indonesia an average of 99,000 cases of work accidents per year. Of these, about 70% have fatal consequences such as death and disability for life. The Ministry of Manpower also noted that the number of work accidents experienced by construction workers was relatively high, namely 31.9% of the total accidents. Of these, about 26% fell from heights, 12% were hit, and 9% were crushed.

Work accidents that occur can cause the project to be hampered or stop in its work activities. To overcome this, a system review is carried out, namely the application of an Occupational Safety and Health Management System (SMK3) in a project in order to create a good and conducive application of occupational safety and health. Efforts to implement SMK3 have been regulated in the Republic of Indonesia Government Regulation Number 50 of 2012 in order to create a safe, efficient and productive workplace. The number of accidents that occur in the work environment needs special attention from company leaders because the accidents that occur will result in losses for both employees and the company where they work.

Likewise in Grobogan Regency the increasing number of construction projects, so every company really needs to pay attention to the company management system, especially to manage the occupational safety and health management system (SMK3). As one of the ongoing projects in Grobogan Regency, the Kenteng-Bangsri R.200 road improvement project in Grobogan Regency has a target of zero fatal incidents without causing any harm to workers, employees and visitors who come to the project site. Therefore, the researchers took the research with the title "Evaluation on the Implementation of Occupational Health and Safety Management Systems (SMK3) in the Road Improvement Project of Kenteng-Bangsri R.200 Grobogan Regency to PP. 50 Tahun 2012" in order to become a reference for the implementation of construction work and create a safe working environment.

2. METHOD

2.1 Place and Time of Research

The place and time for the implementation of this research, entitled "Evaluation on the Implementation of the Occupational Safety and Health Management System (SMK3) in the Road Improvement Project of Kenteng- Bangsri R.200 Grobogan Regency in 2020 to PP No. 50 Tahun 2012 " in Kenteng-Bangsri Road, Grobogan Regency at December 2020 – Januari 2021 with the contractor is PT. Nurcahya Jaya Mandiri.

2.2 Object of Research

The object of this research is the Occupational Health and Safety Management System (SMK3) which is implemented in the process of improving the Kenteng-Bangsri road in Grobogan Regency by PT. Nurcahya Jaya Mandiri based on PP. 50 Tahun 2012.

2.3 Collecting Data

This study uses several methods to collect data, data collection uses the following methods: Primary data in this study were obtained from interviews with K3 officers and parties in the field based on PP No. 50 Tahun 2012 concerning SMK3.

The Check List method, namely by filling in the Check List sheet that has been prepared which contains points regarding SMK3 which refers to the guidelines for assessing the implementation of SMK3 PP No. 50 Tahun 2012. Observation method, with direct observation to find the truth from the results of the answers to the above process, by looking directly at the existing conditions. Secondary data in this study were obtained from documents related to K3 in the project.

2.4 Research Stage

The following is a research method flowchart entitled "Evaluation on the Implementation of the Occupational Safety and Health Management System (SMK3) in the Road Improvement Project of Kenteng-Bangsri R.200 in Grobogan Regency to PP no. 50 Tahun 2012".

3. RESULT AND DISCUSSION

3.1 Application of Occupational Health and Safety Management System

The implementation of the Occupational Safety and Health Management System can be described into 4 main stages such as planning, implementing, examining and taking action. This is similar to Peraturan Menteri Nomor 5/PRT/M/2014 with the basic principles of improvement management through the Plan - Do - Check – Action cycle.



Figure 1. Process of SMK3 Construction in Public Works Sector

3.1.1 Occupational Health and Safety Policy

OHS policies (occupational safety and health) are fundamental to various OHS management systems. The occupational safety and health policy is usually a written policy signed by top management and disseminated to all elements in the organization from workers, management to visiting guests.

PT. Nurcahya Jaya Mandiri has established several policies and is fully committed to OHS responsibilities in work implementation activities for the creation of ZERO ACCIDENT, in making OSH policies and planning, the company also makes policies on the prevention and control of Covid-19 by maintaining health protocols so that in policy making, the company also pays attention to current conditions. The company has informed workers about the vision, mission and policies that have been made during morning meetings and the installation of banners regarding policies on the prevention and control of Covid-19.

The K3 policy is made as proof that the company has fully committed and is responsible for K3 in its work implementation activities and to comply with the regulations and requirements related to occupational safety and health.

3.1.2 Construction Safety Planning

Hazard identification is one of the stages of K3 risk management which aims to identify all potential hazards that exist in a work activity. Risk assessment is carried out to determine the magnitude of a risk by considering the severity and likelihood that it might occur. Controlling risk is an important and decisive step in overall risk management. Risk control plays a role in reducing or minimizing the level of risk that exists to the lowest level or level that can be tolerated. Based on attachment 2 of the PerMen Pekerjaan Umum Nomor: 05 / PRT / M / 2014 in making an OHS plan, service providers are required to make hazard identification, risk assessment and risk control for K3, and the person in charge to be submitted, discussed, and approved by PPK during the implementation preparation meeting contract.

As is the case with the Kenteng-Bangsri Road Improvement Project R.200 Grobogan Regency, PT. Nurcahya Jaya Mandiri as a service provider has made identification before work activities begin as evidenced by the hazard identification and risk control in the RKK in the bidding document.

Another thing that must be considered in the preparation of an OSH plan is

the laws and regulations and other requirements that are used as a reference in implementing SMK3. As one of the important components in the preparation of an OSH plan, PT. Nurcahya Jaya Mandiri uses the following K3 laws and requirements: UU No. Tahun 1999 tentang Jasa Konstruksi, Peraturan Pemerintah Nomor 50 Tahun 2012 Tentang Penerapan SMK3, Undang-Undang No.1 Tahun 1970 tentang Keselamatan Kerja, Undang-undang Republik Indonesia No. 13 Tentang Ketenagakerjaan, No: Per.01/MENAKERTRANS/1980 Tentang Keselamatan dan Kesehatan Kerja pada Konstruksi Bangunan, PP No. 29 Tahun 2000 tentang Penyelenggaraan Jasa Konstruksi, Peraturan Menteri PU No. 09/PRT/M/2008 tentang Pedoman Sistem Manajemen Keselamatan dan Kesehatan Kerja (SMK3) Konstruksi. Permen PU No. 5 Tahun 2014 Tentang Pedoman SMK3 Konstruksi Bidang Pekerjaan Umum. UU No. 2 Tahun 2018 Tentang Jasa Konstruksi. Permen PU No 02/PRT/M/2018 Pedoman Sistem Manajemen Keselamatan dan Kesehatan Kerja (SMK3) Konstruksi Bidang Pekerjaan Umum.

3.1.3 Implementation and Operations Analysis

The implementation and operation of the Kenteng-Bangsri road improvement project in Grobogan Regency carried out by PT. Nurcahya Jaya Mandiri, including:.

The results of the implementation and operation survey at the Kenteng-Bangsri road project in Grobogan Regency are shown in the table below.

Table 1. Application of resource operations and organizational structure in the road improvement project of Kenteng-Bangsri, Grobogan Regency.

Element		Information
Resource	Human Resources	The labor used is a number of communities around the project, and skilled workers in their fields.
	Equipment	Personal protective equipment or APD (Safety Helmets, Safety Shoes, gloves, safety vests, breathing masks, etc.), thermometers for checking labor temperature, OHS signs.

	Facilities	Temporary housing for workers (the house of the lurah) which already has a toilet and other facilities for workers, a canteen located in the houses of local residents.
Organizational structure	Emergency Response Structure	In the project to improve Jalan Kenteng-Bangsri, Grobogan Regency, there is no clear organizational structure.
	P2K3 structure	

In this case PT. Nurcahya Jaya Mandiri has provided complete APD. However, many workers prefer not to wear it for convenience reasons even though they have been warned by the K3 officer to always wear APD at work.



Figure 2. Workers Without APD

a) Competence, training and care

PT. Nurcahya Jaya Mandiri is committed to implementing the implementation of construction safety in the environment by complying with the OHS regulations and regulations including providing training programs and improving employee performance through competency testing of all

workforce according to their respective field expertise and also PT. Nurcahya Jaya Mandiri cares about a series of activities carried out by making work plans and programs as a preventive measure against the risk of work accidents, illness due to work and restoration of polluted environment due to construction work. PT. Nurcahya Jaya Mandiri has provided training programs for all employees with their respective fields of expertise and this is proven by one of the employee expertise certificates in the field of OHS.

b) Communication, participation and consultation

PT. Nurcahya Jaya Mandiri is committed to disseminating or communicating information on the environment, occupational safety and health to internal and external parties. Communicate to internal parties or workers by a construction safety meeting is held every Friday during the implementation, construction safety induction, safety morning, working group meeting.

Meanwhile, to communicate to external parties or the surrounding community by holding a meeting with the village head and several community representatives, then sharing the results of the meeting with the surrounding community. Communication is not only verbal but also non- verbal as well as aids in the form of posters, banners and OHS signs.



Figure 3. OHS Warning Signs



Figure 4. Socialization to the Community

PT. Nurcahya Jaya Mandiri has documented SMK3 by making RKK which is a complete document of the SMK3 implementation plan and is an integral part of the contract document of a construction work and is used as a means of interaction between service providers and service users in implementing SMK3.

PT. Nurcahya Jaya Mandiri has identified each document made such as weekly report documents and monthly reports according to type and category by providing numbering, title and being recorded properly with the date the document was made.

Operations control will be applied and evaluated simultaneously to determine the effectiveness of operational controls and incorporate the overall SMK3 of the company. Some of the operational controls of PT. Nurcahya Jaya Mandiri in the Kenteng-Bangsri road improvement project in Grobogan Regency, one of which is the appointment of personnel in charge of SMK3, and the installation of warning signs according to workplace conditions

PT. Nurcahya Jaya Mandiri has appointed personnel who are responsible for SMK3 activities and are in accordance with the expertise in their fields, as evidenced by the existence of a certificate of expertise in the field of K3. However, PT. Nurcahya Jaya Mandiri only appointed 1 personnel as the person in charge of SMK3 activities so that it was not maximal in implementing SMK3 in work activities.



Figure 5. OHS Officers at the Kenteng-Bangsri Project in 2020

Warning signs are also being applied in this Kenteng-Bangsri road improvement project. A warning sign is a warning located at the project site that has the potential to cause danger and safety to workers and the community around work activities. Signs that are installed in the location are warning signs and orders, as well as information that is created and posted on the job site. There are also restrictions on access to or from the work site in the form of closing bamboo fences and directions for alternative roads.



Figure 6. Closure of Road Access and Warning Signs

The plan and response to emergency conditions made by PT. Nurcahya Jaya Mandiri in the Kenteng-Bangsri road improvement project in Grobogan Regency, as evidence that the company is ready and alert when a danger comes, and as evidenced by the availability of first aid kits. emergency and did not specify a P3K officer so it only relied on Geyer 2 Puskesmas officers.

There are many ways of inspection and repair carried out by PT. Nurcahya Jaya Mandiri on the project to improve the Kenteng-Bangsri road in Grobogan Regency. To control the environment, the company carries out activities such as control related to traffic so that it does not interfere with the environment, traffic

and work activities. The company also carries out environmental controls related to environmental pollution, noise, such as preventing dust during the dry season, doing regular watering and not using vehicles that emit loud, noisy sounds, especially for prone areas such as residential areas and health places.

PT. Nurcahya Jaya Mandiri also evaluated the road structure work on the project together with PPK to ensure that all requirements were met in accordance with the contract documents, in this case PT. Nurcahya Jaya Mandiri also made weekly and monthly reports which were used as road work performance reports at that time.

In accordance with the project work contract document for the improvement of the Kenteng-Bangsri road in Grobogan Regency, PT. Nurcahya Jaya Mandiri conducted a management review by examining the results and evaluating the K3 performance in the monitoring and evaluation section, then clarifying it according to the appropriate category and not according to the benchmarks as in construction safety planning. Matters that are not appropriate, including if a work accident occurs, a review is carried out to take corrective action.

3.2 Implementation of SMK3 Based on PP. 50 of 2012

In this study, researchers measured the level of implementation of the Occupational Safety and Health Management System in the Kenteng- Bangsri road improvement project, Grobogan Regency carried out by PT. Nurcahya Jaya Mandiri using Government Regulation Number 50 of 2012 at the initial level, namely by using 64 criteria in accordance with the stages of the assessment process that must be carried out.



Figure 7. Continuous Assessment Process Chart for SMK3 achievement

Table 2. Table of Assessment of Assessment of the Implementation of Early Level SMK3 in the Kenteng-Bangsri Road Improvement Project R.200 Grobogan Regency based on PP No. 50 Tahun 2012.

NO	SMK3 AUDIT CRITERIA		ASSESSMENT			
			Corresponding	Critical Category	Major Category	Minor Category
1	1	Building and Maintenance Commitments				
	1.1	OHS Policy				
	1.1.1	There is a written OHS policy dated, signed by the entrepreneur or management, clearly stating the goals and objectives of OSH and commitment to improving K3.	✓			
2	1.1.3	The company communicates, policies, K3 to all workers, guests, contractors, customers and suppliers in the right manner	✓			
3	1.2	Responsibility and Authority to Act				
	1.2.2	The appointment of a person in charge of OSH must be in accordance with statutory regulations	✓			
4	1.2.4	Entrepreneurs or administrators are fully responsible for ensuring the implementation of SMK3	✓			
5	1.2.5	Officers responsible for handling emergencies are assigned and trained				X
6	1.2.6	The company gets suggestions from experts in the field of K3 who come from within and / or outside the company	✓			
7	1.3	Review and Evaluation				
	1.3.3	Management must review the implementation of SMK3 periodically to assess the suitability and effectiveness of SMK3	✓			
8	1.4	Workforce Engagement and Consultation				
	1.4.1	Involvement and scheduling of workforce consultations with company representatives are documented and disseminated to the entire workforce.	✓			
9	1.4.3	The company has established P2K3 in accordance with statutory regulations			X	
10	1.4.4	The Chairperson of P2K3 is the top leader or committee			X	
11	1.4.5	The P2K3 secretary is an K3 expert in accordance with statutory regulations			X	
12	1.4.6	P2K3 focuses on developing policies and procedures for controlling risks			X	
13	1.4.7	The composition of the P2K3 management is documented and informed to the workforce			X	
14	1.4.8	P2K3 meets regularly and the results are disseminated in the workplace			X	
15	1.4.9	P2K3 reports its activities regularly in accordance with statutory regulations			X	
	2	Making and Documenting OHS Plans				
	2.1	OHS strategic plan				

16	2.1.1	There is a documented procedure for hazard potential identification, research and OHS risk control	✓			
17	2.4	OHS Information				
	2.4.1	The information needed regarding K3 activities is disseminated systematically to all workers, guests, contractors, customers and suppliers	✓			
18	3	Control of Contract Design and Review				
	3.1	Design Control				
	3.1.1	A documented procedure that considers hazard potential identification, risk assessment and control carried out during the design and modification stages	✓			
19	3.2	Contract review				
	3.2.2	Hazard identification and risk assessment is carried out during contract review by a competent officer	✓			
20	4	Document control				
	4.1	Approval, Issuance, and Document Control				
	4.1.1	OHS documents have identification of status, authority, date of issue and date of modification	✓			
21	5	Product Assessment and Control				
	5.1	Specifications for Purchasing Goods and Services				
	5.1.1	There are documented procedures that can ensure that technical specifications and other information relevant to OSH have been checked prior to the decision to buy.	✓			
22	5.1.2	Purchase specifications for each production facility, chemical substance or service must be completed with specifications in accordance with the requirements of the K3 legislation and standards.	✓			
23	5.2	Goods and Services Verification System Purchased				
	5.2.1	The goods and services purchased are checked for conformity with the purchase specifications.	✓			
24	6	Work Safety Based on SMK3				
	6.1	Work system				
	6.1.1	Competent officers have identified hazards, assessed and controlled risks arising from a work process.	✓			
25	6.1.5	There is a work permit system for high-risk assignments.	✓			
26	6.1.6	Personal protective equipment is provided as needed and is used properly and is always maintained in a condition that is fit for use.			X	
27	6.1.7	The personal protective equipment used is confirmed to have been declared fit for use in accordance with applicable standards and / or laws and regulations.	✓			
28	6.2	Supervision				
	6.2.1	Supervision is carried out to ensure that every job is carried out safely and follows predetermined procedures and work instructions.	✓			
	6.3	Selection and Placement of Personnel				

29	6.3.1	Specific job requirements including health requirements are identified and used to select and place workers.	✓			
30	6.3.2	Job assignments must be based on the capabilities and skills and authority possessed.	✓			
31	6.4	Restricted area				
	6.4.1	Entrepreneurs or managers carry out a risk assessment of the work environment to identify areas that require restrictions on entry permits.	✓			
32	6.4.2	There is control over areas / places with restrictions on entry permits.	✓			
33	6.4.3	Availability of facilities and services in the workplace according to technical standards and guidelines.	✓			
34	6.4.4	K3 signs must be installed in accordance with technical standards and guidelines.	✓			
35	6.5	Maintenance, Repair and Change of Production Facilities				
	6.5.2	All records containing detailed data of the activities of inspection, maintenance, repair and changes made to production facilities and equipment must be kept and maintained.	✓			
36	6.5.3	Production facilities and equipment have valid certificates in accordance with statutory requirements and standards.	✓			
37	6.5.4	Inspection, maintenance, maintenance, repairs and any changes must be carried out by competent and authorized personnel.	✓			
38	6.5.7	There is a system for marking equipment that is no longer safe to use or is no longer in use.				X
39	6.5.8	If necessary, implement a lock out system to prevent production facilities from being turned on prematurely.	✓			
40	6.5.9	There are procedures that can guarantee the safety and health of workers or other people who are near the production facilities and equipment during the inspection, maintenance, repair and modification processes.	✓			
41	6.7	Readiness to handle emergencies				
	6.7.4	Emergency handling officers are assigned and given special training and are informed to all people in the workplace.				X
42	6.7.6	Equipment and emergency alert systems are provided, checked, tested and maintained periodically in accordance with statutory regulations, relevant technical standards and guidelines.	✓			
43	6.8	First aid				
	6.8.1	The company has evaluated the first aid kit and has ensured that the existing first aid system complies with laws and regulations, technical standards and guidelines.	✓			

44	6.8.2	First aid officers have been trained and appointed in accordance with laws and regulations.				X
45	7	Monitoring Standards				
	7.1	Hazard Check				
	7.1.1	Inspection / inspection of workplaces and work methods is carried out regularly.	✓			
46	7.2	Work Environment Monitoring / Measurement				
	7.2.1	Monitoring / measurement of the work environment is carried out regularly and the results are documented, maintained and used for risk assessment and control.	✓			
47	7.2.2	Work environment monitoring / measurement includes physical,			X	
		chemical, biological, ergonomic and psychological factors.				
48	7.2.3	Work environment monitoring / measurement is carried out by competent and authorized officers or parties from within and / or outside the company.			X	
49	7.4	Labor Health Monitoring				
	7.4.1	Monitoring the health of workers who work in workplaces with high potential hazards in accordance with statutory regulations.	✓			
	7.4.3	The workforce health examination is carried out by a designated examining doctor in accordance with statutory regulations.				X
51	7.4.4	The company provides occupational health services in accordance with statutory regulations.	✓			
52	7.4.5	Records regarding workforce health monitoring are made in accordance with statutory regulations.			X	
53	8	Deficiencies Reporting and Correction				
	8.3	Accident Examination and Assessment				
	8.3.1	The workplace / company has procedures for inspection and assessment of occupational accidents and occupational diseases.	✓			
54	9	Material Management and Transfers				
	9.1	Manual and Mechanical Handling				
	9.1.1	There are procedures to identify potential hazards and assess risks associated with manual and mechanical handling.	✓			
55	9.1.2	Hazard identification and risk assessment are carried out by competent and authorized officers.	✓			
56	9.2	Transport, Storage and Disposal Systems				
	9.2.1	There are procedures to ensure that materials are stored and transferred in a safe manner in accordance with statutory regulations.	✓			
57	9.2.3	There are procedures to ensure that materials are disposed of in a safe manner in accordance with statutory regulations.	✓			
58	9.3	Control of Hazardous Chemicals (BKB)				
	9.3.1	The company has documented and implemented procedures regarding				

		storage, handling and transfer of BKB in accordance with statutory requirements, relevant technical standards and guidelines.	✓			
59	9.3.3	There is a system for clearly identifying and labeling hazardous chemicals.	✓			
60	9.3.4	Danger warning signs are installed in accordance with the requirements of laws and regulations and / or relevant standards.	✓			
61	12	Skills and Ability Development				
	12.2	Training for Management and Supervisors				
	12.2.1	Executive management members and administrators participated in the training which included an explanation of the legal obligations and principles and implementation of OSH.				X
62	12.2.2	Managers and supervisors / supervisors receive training appropriate to their roles and responsibilities.	✓			
63	12.3	Workforce Training				
	12.3.1	Training is provided to all workers including new workers and migrants so that they can carry out their duties safely.	✓			
64	12.5	Special Skills Training				
	12.5.1	The company has a system that ensures compliance with license or qualification requirements in accordance with laws and regulations to carry out special tasks, carry out work or operate equipment.			X	
Total			46		12	6
			Corresponding		Major	Minor
Percentage			71.9%		18.7%	9.4%

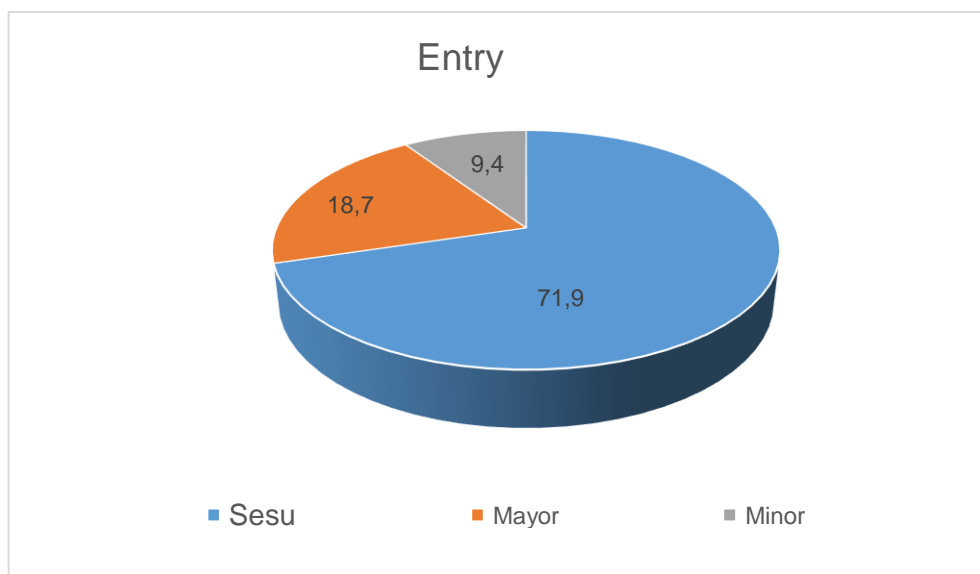


Figure 8. Entry Level Application Level

3.3 Presentation of Interview Data

In this study also used data from interviews with K3 officers related to Occupational Health and Safety in the Kenteng-Bangsri road improvement project in Grobogan Regency. The results of this interview which will then describe how the implementation of SMK3 based on PP No. 50 of 2012 in the Kenteng-Bangsri road improvement project, Grobogan Regency.

Table 3. Table presentation of data and results of interviews with K3 officers based on Attachment II PP No. 50 Tahun 2012

No	CRITERIA	QUESTION	STATEMENT
1	1.2.4	Is the entrepreneur or management fully responsible for ensuring the implementation of SMK3 in the Kenteng-Bangsri road improvement project?	The management is clearly responsible because there is evidence of my signature as the technical person in charge at the RKK and there is a construction safety commitment that has been signed as well.
2	1.2.5	Has the officer responsible for emergency handling at the Kenteng-Bangsri road project been assigned and received training?	If it is determined and training, I am not sure because for handling if there is an accident the task of handling and acting quickly is the local health center medical officer, namely the Geyer 2 puskesmas, while I and other fellow workers help with quick responses to contact the puskesmas or deliver to the puskesmas quickly
3	1.2.6	Does the company receive suggestions from experts in the field of K3?	The company receives advice and input from OSH experts from within the company regarding suggestions related to risks
4	1.3.3	Does the Kenteng-Bangsri road project	Yes, we carry out periodic evaluations every once a
		regularly review the implementation of SMK3 to assess the suitability and effectiveness of SMK3?	month which has been scheduled in the bidding document of the construction safety performance evaluation section.
5	1.4.1	Is the Kenteng-Bangsri road project involved	To have a scheduled meeting with workers, it is always

		and the scheduling of labor consultations with company representatives documented and disseminated to the entire workforce?	held every Friday and it has been scheduled in the contract document but there is no documentary evidence in the form of a photo.
6	1.4.3	Has the company or executor established a P2K3 in accordance with the regulations?	For the formation of P2K3 itself does not exist because PUPR Grobogan Regency did not ask for such formation in the contract
7	2.1.1	Is there a procedure for identifying potential hazards, assessing and controlling K3 risks in the Kenteng-road project?Bangsri Grobogan Regency?	There are procedures for identifying potential hazards, assessing and controlling OSH risks in company documents.
8	2.4.1	Is the required information regarding K3 activities in the	For K3 information in the form of a banner or bamboo to close the road, we indeed
		Kenteng-Bangsri road project disseminated systematically to all workers, guests, contractors, customers and suppliers?	attach a road cover because we work in the field which is sometimes passed by the community as well so to tell the public to be more careful in the area around the work, and for the form of a document it is already in the K3 policy. in the contract documents and information regarding OSH is also explained during the morning meeting.
9	3.2.2	Was the hazard identification and risk assessment in the Kenteng-Bangsri road project carried out during the contract review by a competent officer?	Yes, because the officer observing was an OHS expert and myself as an OHS officer.
10	5.1.1	Are there any documented procedures in the Kenteng-Bangsri road project that can ensure that technical specifications and other information relevant to OSH have been	There are, such as APD brands, etc. and we also definitely buy APD that is in accordance with the SNI standard security.

		checked prior to the decision to buy?	
11	5.1.2	Are the purchasing specifications for each production facility or service equipped with specifications that match the requirements?	It must be in accordance with the specifications, as evidence it can be checked on the note as proof of purchasing APD branded and standard SNI but I cannot give the note because it cannot be distributed.
12	5.2.1	Are the goods and services purchased checked against the purchase specifications?	Yes, for example, the slump test is carried out and the results are compared with the specification requirements in the contract.
13	6.1.1	Has the competent officer identified the potential hazards and assessed the risks arising from the work process on the Kenteng-Bangsri road project?	The company has also assigned personnel to the officers who identify them, namely me as the K3 officer and the K3 expert from the company.
14	6.1.5	Is there a work permit system for high-risk assignments on the Kenteng-Bangsri road project?	There is no such system, because in the risk assessment there is no work on the Kenteng-Bangsri road project which is high risk but we have also informed the community.
15	6.1.7	Is the PPE provided in the Kenteng-Bangsri road project in accordance with the standards?	The APD provided includes safety helmets, standard safety shoes and the SNI logo.
16	6.3.2	Does the assignment in the Kenteng-Bangsri road project have to be based on the capabilities and skills and authority possessed?	Yes, of course, all managerial personnel in the project are given tasks and authority based on their respective experiences and abilities and can be proven by their respective certificates of expertise.
17	6.4.1	Did the entrepreneur or the manager of the Kenteng-Bangsri road project carry out a risk assessment of the work environment to identify areas that require restricted entry permits?	The work environment risk assessment has been carried out and then the entry permit is restricted during casting work so that the community is prohibited from passing the road.

18	6.4.2	Is there any control over the area / place with restrictions on entry permits in the casting area on the Kenteng-Bangsri road project?	Of course there are, we put some road coverings such as bamboo fences, and give signs to pass the other roads.
19	6.5.2	Does the equipment in the Kenteng-Bangsri road project have a record containing details of the inspection, maintenance, repair and change activities carried out?	All documents or records regarding the tools used are kept at the head office, but there is a good vehicle statement in the contract documents
20	6.5.4	Are inspections, maintenance, repairs and any changes carried out by competent and authorized personnel?	Repair and maintenance of production equipment is carried out by technicians or operators from the company itself.
21	6.5.7	Does the Kenteng-Bangsri road project have a system for marking equipment that is no longer safe?	Nothing, if the tool is not safe or is being repaired, usually only notified by verbal communication if the tool is being repaired.
22	6.5.8	Is an operation locking system implemented in the project to prevent production facilities from being used?	Yes, but usually enough notice by the technician that we already know not to use the tool.
23	6.7.4	Have emergency handling officers at the Kenteng-Bangsri road project been assigned and given special training and informed	We don't have emergency handling officers, only me as the person in charge of K3.
		to all people in the workplace?	
24	6.7.6	Are equipment and emergency alert systems provided, inspected, tested and maintained periodically in accordance with statutory regulations?	Equipment in the form of a first aid kit at the field office as a form of first handling if a minor accident occurs in the field of work.
25	6.8.1	Has the company evaluated the first aid kit and guaranteed that the existing first aid system complies with	We have provided first aid kits available at the field office.

		laws and regulations?	
	6.8.2	Does the company assign first aid officers in the field of work?	No, the company does not assign a first aid officer.
26	7.1.1	Has the Kenteng-Bangsri road project been inspected for workplaces and work methods? And has it been done regularly?	There is a schedule and it has been done, one of the documentary evidence is the weekly report.
27	7.2.1	Has working environment monitoring at the Kenteng-Bangsri road project been carried out regularly and the results documented, maintained and used for risk assessment and control?	Conducted, as well as environmental control regarding traffic, noise and dust during the dry season.
28	8.3.1	Does the Kenteng-Bangsri road project have procedures for inspection and assessment of occupational accidents and occupational diseases?	Not for that

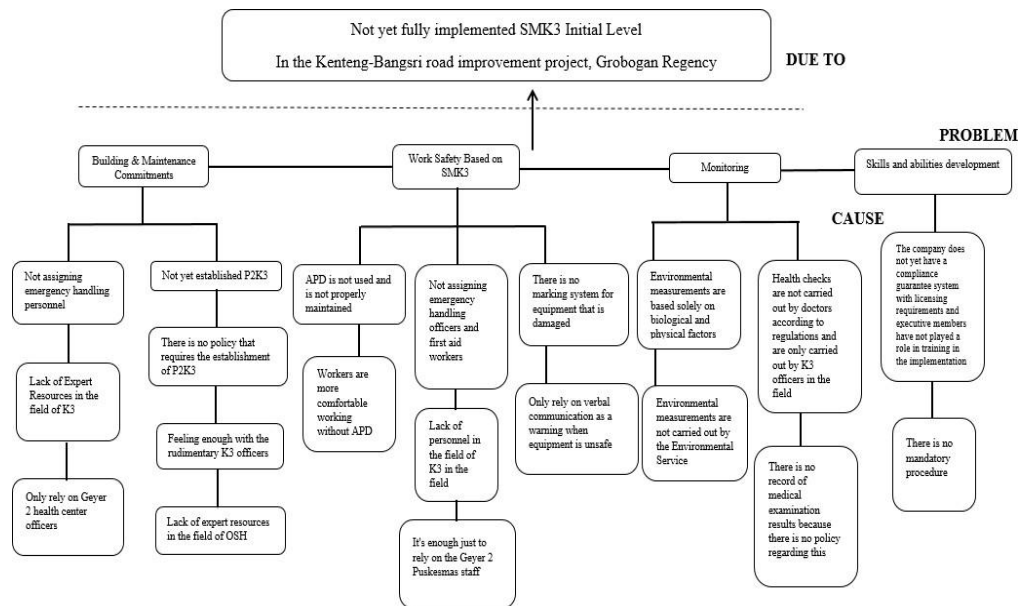


Figure 9. Initial Level Assessment Problem Tree 64 Criteria

Alternative solutions to fix the unfulfilled criteria are presented in the table below:

Table 4. Alternative Table of Improvement Sousi at Initial Level

Element	Criteria	Alternative Solution or Repair
Building and Maintenance Commitments	1.2.5	<ul style="list-style-type: none"> - Addition of skilled personnel in the field of K3 so that in the future they can carry out better implementation and be more alert when undesirable conditions occur. - Providing training facilities in the field of OSH experts for employees so that there will be more expert resources in that field.
	1.4.3-1.4.9	<ul style="list-style-type: none"> - The establishment of a P2K3 organization formation policy in a construction work.
		<ul style="list-style-type: none"> - Providing training facilities in the field of OSH experts for employees so that there will be more expert resources in that field.
Work Safety Based on SMK3	6.1.6	<ul style="list-style-type: none"> - Increase assertiveness against workers who do not comply with regulations. - to raise awareness of the responsibility of K3 by conducting more frequent outreach to workers about the importance of using APD for safety.
	6.5.7	<ul style="list-style-type: none"> - A system for marking unsafe equipment is established by means of labeling. - Additional budget for the purchase of lock out system equipment. - A written procedure for marking unsafe equipment is established.
	6.7.4	<ul style="list-style-type: none"> - Addition of skilled personnel in the field of K3 so that in the future they can carry out better implementation and be more alert when undesirable conditions occur. - Providing training facilities in the field of OSH experts for employees so that there will be more expert resources in that field.
	6.8.2	<ul style="list-style-type: none"> - Addition of skilled personnel in the field of K3 so that in the future they can carry out better implementation and be more alert when undesirable conditions occur.
		<ul style="list-style-type: none"> - Providing training facilities in the field of OSH experts for employees so that there will be more expert resources in

		that field.
Monitoring Standards	7.2.2-	- Collaborating with the Environment Agency so that environmental measurements are more accurate.
	7.2.3	
	7.4.3	- Not only checking the temperature for the workforce. So that health checks are carried out by cooperating health institutions.
	7.4.5	- Making SOPs related to recording the results of labor health checks. - A policy is made regarding the recording of documents regarding worker health so that it can be used whenever needed.
Skills and Ability Development	12.2.1	- Create a written policy so that members of the executive management are required to participate in training covering legal obligations and principles for implementing OSH. - Raise awareness regarding the active role of members of executive management, attend trainings that are held, are more often supervised by the central leadership, and conduct training
		on legal obligations and principles of OSH implementation. - Adding Expert Resources in the field of K3.
	12.5.1	- Create a system of guaranteeing compliance with license terms. - Creating policies related to the license compliance guarantee system.

4. CLOSING

Based on the research entitled evaluation on the implementation of SMK3 in the road improvement project Kenteng-Bangsri R. 200 Grobogan Regency based on PP No. 50 Tahun 2012, the following conclusions can be obtained: Based on the researcher's observations, the implementation of the Occupational Safety and Health Management System (SMK3) in the Kenteng-Bangsri road improvement project in Grobogan Regency has carried out a series of SMK3 construction processes even though it is not fully in accordance with the SMK3 construction process series and the need for understanding and awareness by workers and company personnel about SMK3.

The results of SMK3 assessment based on PP No. 50 Tahun 2012 for the

initial level with a total of 64 criteria, PT. Nurcahya Jaya Mandiri has implemented 46 criteria or 71.9% and includes the level of good application assessment. Then from the results of the assessment, there are 19 criteria that have not been met. The following are some of the problems and causes of applying the non-conforming criteria:

Building and Maintenance Commitments: Did not assigning emergency officers because they only rely on Geyer Health Center officers. Did not establish P2K3 because there was no policy requiring P2K3, felt that there were enough OHS officers and a lack of expert resources in the OSH sector.

Work Safety Based on SMK3. APD is not used and cared for properly because workers are more comfortable working without APD. Only rely on verbal communication as a warning when equipment is unsafe. Not assigning emergency officers because they felt that they had enough to rely on Geyer 2 Puskesmas officers. P3K officers were not appointed because they felt that it was sufficient to rely on Geyer 2 Puskesmas officers.

Monitoring Standards: Environmental measurements are based on only a few factors and Health checks are not carried out by doctors according to legislation and are only carried out by K3 officers in the field.

Skills and Ability Development: The company does not yet have a policy regarding compliance with license terms. The company does not yet have a procedure that requires executive members to play a role in training in the implementation of K3 principles.

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